



LSC TRANSPORTATION CONSULTANTS, INC.

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October 29, 2018

Ms. Susan Martini  
Aurora Public Schools  
Construction Management  
1369 Airport Boulevard  
Aurora, CO 80011

Re: APS P-8 at Harmony  
Aurora, CO  
LSC #181170

Dear Ms. Martini:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed APS P-8 at Harmony School. As shown on Figure 1, the site is located east of Powhaton Road and north of E. 1<sup>st</sup> Avenue in Aurora, Colorado.

## **REPORT CONTENTS**

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected long-term background and resulting total traffic volumes on the area roadways; recommendations to mitigate growth in background traffic and the impact of the proposed school.

## **LAND USE AND ACCESS**

The site is proposed as a 983-student Pre-School through 8<sup>th</sup> Grade public school. Full movement is proposed to E. 1<sup>st</sup> Avenue and N. Robertsdale Street. Figure 2 shows the conceptual site plan.

## **ROADWAY AND TRAFFIC CONDITIONS**

### **Area Roadways**

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- E. 1<sup>st</sup> Avenue is an east-west, two-lane collector roadway south of the site. The intersections with N. Robertsdale Road and Trussville Road are proposed as modern single-lane roundabouts.

## 2040 Background Traffic

It is unclear when the surrounding areas will develop so this analysis focuses on the 2040 long range scenario. Figure 3 shows the estimated 2040 background traffic based on the March, 2017 Harmony Traffic Study by LSC with adjustments based on the most recent plans for the surrounding properties.

## 2040 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for unsignalized intersections.

The intersections in the study area were analyzed to determine the 2040 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **E. 1<sup>st</sup> Avenue/N. Robertsdale Street:** All movements at this roundabout-controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
- **E. 1<sup>st</sup> Avenue/Trussville Road:** All movements at this roundabout-controlled intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
- **N. Robertsdale Street/Harmony Access/Bus Loop:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.
- **E. 1<sup>st</sup> Avenue/Harmony Access/Visitor Lot:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2040.

## TRIP GENERATION

Table 2 shows the estimated typical weekday, morning peak-hour, and afternoon peak-hour trip generation for the expansion based on the rates from *Trip Generation, 10<sup>th</sup> Edition*, 2017, by the Institute of Transportation Engineers (ITE).

The site is projected to generate about 1,908 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 345 vehicles would enter and about 294 vehicles would exit the site. During the afternoon peak-hour, about 152 vehicles would enter and about 184 vehicles would exit the site.

## TRIP DISTRIBUTION

Figure 4 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. These estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site's proposed land use.

## TRIP ASSIGNMENT

Figure 5 shows the estimated buildout site-generated traffic volumes based on the directional distribution percentages (from Figure 4) and the trip generation estimate (from Table 2). The assignment assumes all vehicles exiting the visitor lot will turn right onto E. 1<sup>st</sup> Avenue and use the roundabouts in the area to complete U-Turns as necessary to increase the service rate and reduce queuing back into the site. This requirement may not be necessary until the surrounding area is sufficiently developed.

## 2040 TOTAL TRAFFIC

Figure 6 shows the 2040 weekday total traffic which is the sum of the 2040 background traffic volumes (from Figure 3) and the buildout site-generated traffic volumes (from Figure 5).

## PROJECTED LEVELS OF SERVICE

The intersections in the study area were analyzed to determine the 2040 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **E. 1<sup>st</sup> Avenue/N. Robertsdale Street:** All movements at this roundabout-controlled intersection are expected to operate at LOS "A" during both morning and afternoon peak-hours through 2040.
- **E. 1<sup>st</sup> Avenue/Trussville Road:** All movements at this roundabout-controlled intersection are expected to operate at LOS "A" during both morning and afternoon peak-hours through 2040.
- **N. Robertsdale Street/Harmony Access/Bus Loop:** All movements at this unsignalized intersection are expected to operate at LOS "A" during both morning and afternoon peak-hours through 2040.
- **E. 1<sup>st</sup> Avenue/Harmony Access/Visitors Lot:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2040.
- **E. 1<sup>st</sup> Avenue/Student Drop-Off Loop:** All movements at this unsignalized intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2040.

**PEDESTRIAN CONNECTIVITY**

The pedestrian routes for most of the future homes planned south of E. 1<sup>st</sup> Avenue will be along Robertsedale Street and Trussville Road allowing a convenient crossing of E. 1<sup>st</sup> Avenue via the proposed roundabouts.

**CONCLUSIONS AND RECOMMENDATIONS****Trip Generation**

1. The site is projected to generate about 1,908 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 345 vehicles would enter and about 294 vehicles would exit the site. During the afternoon peak-hour, about 152 vehicles would enter and about 184 vehicles would exit the site.

**Projected Levels of Service**

2. All movements at the intersections analyzed are expected to operate at LOS "C" or better through 2040.

**Conclusions**

3. The impact of the proposed APS P-8 at Harmony School can be accommodated by the existing and planned roadway network with the following recommendations.

**Recommendations**

4. An eastbound left-turn lane is recommended on E. 1<sup>st</sup> Avenue approaching the Student Drop-Off Loop. An appropriate length would be the maximum available with a back-to-back 50-foot westbound left-turn lane to the west separated by a 100-foot transition taper.
5. On-street parking will not be allowed on E. 1<sup>st</sup> Avenue between the roundabouts to allow a three-lane roadway with on-street bike lanes to fit in the proposed cross-section.
6. A westbound right-turn lane is recommended on E. 1<sup>st</sup> Avenue approaching the Student Drop-Off Loop. An appropriate length would be 200 feet plus a 100-foot transition taper.
7. The proposed drop-off/pick-up driveway should have two entry lanes from E. 1<sup>st</sup> Avenue to improve ingress to the site.

\* \* \* \* \*

We trust our findings will assist you in gaining approval of the proposed APS P-8 at Harmony development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC

By

Christopher S. McGranahan, PE, PTOE  
Principal



10-29-18

CSM/wc

Enclosures: Tables 1 and 2  
Figures 1 - 6  
Level of Service Definitions  
Level of Service Reports

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**Table 1**  
**Intersection Levels of Service Analysis**  
**APS P-8 at Harmony**  
**Aurora, CO**  
**LSC #181170; October, 2018**

Intersection Location	Traffic Control	2040 Background Traffic		2040 Total Traffic	
		Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM
<u>E. 1st Avenue/N. Robertsdale Street</u>	Roundabout				
EB Approach		A	A	A	A
WB Approach		A	A	A	A
NB Approach		A	A	A	A
SB Approach		A	A	A	A
Entire Intersection Delay (sec /veh)		3.7	3.7	7.8	5.8
Entire Intersection LOS		A	A	A	A
<u>E. 1st Avenue/Trussville Road</u>	Roundabout				
EB Approach		A	A	A	A
WB Approach		A	A	A	A
NB Approach		A	A	A	A
SB Approach		A	A	A	A
Entire Intersection Delay (sec /veh)		3.9	3.9	5.9	5.0
Entire Intersection LOS		A	A	A	A
<u>N. Robertsdale Street/Harmony Access/Bus Loop</u>	TWSC				
NB Approach		A	A	A	A
EB Approach		A	A	A	A
WB Approach		--	--	A	A
SB Approach		--	--	A	A
Critical Movement Delay		8.5	8.4	9.3	9.2
<u>E. 1st Avenue/Harmony Access/Visitor Lot</u>	TWSC				
NB Approach		A	A	C	B
EB Approach		--	--	A	A
WB Approach		A	A	A	A
SB Approach		--	--	C	B
Critical Movement Delay		9.9	9.9	20.6	14.3
<u>E. 1st Avenue/Student Drop-Off</u>	TWSC				
EB Left		--	--	A	A
SB Approach		--	--	C	B
Critical Movement Delay		--	--	17.3	11.6

**Table 2**  
**ESTIMATED TRAFFIC GENERATION**  
**APS P-8 at Harmony**  
**Aurora, CO**  
**LSC #181170; October, 2018**

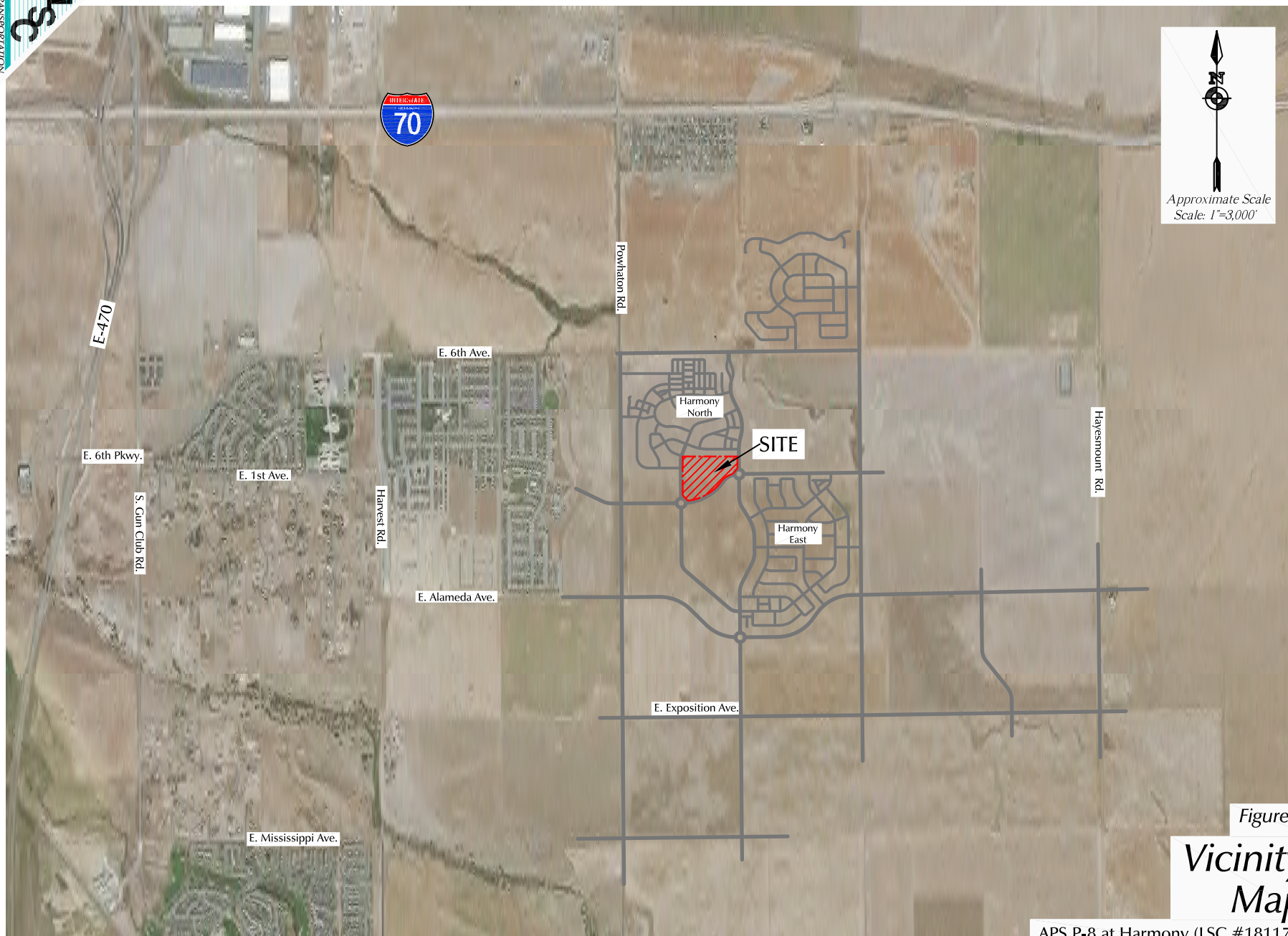
Trip Generating Category	Quantity	Trip Generation Rates <sup>(1)</sup>					Vehicle-Trips Generated				
		Average Weekday	AM Peak-Hour		PM School Peak-Hour		Average Weekday	AM Peak-Hour		PM School Peak-Hour	
		In	Out	In	Out	In	Out	In	Out		
<b>PROPOSED LAND USE</b>											
Elementary School <sup>(2)</sup>	772 Students	1.89	0.362	0.308	0.153	0.187	1,459	279	238	118	144
Middle/Junior High School <sup>(3)</sup>	211 Students	2.13	0.313	0.267	0.161	0.189	449	66	56	34	40
<b>Total =</b>							<b>1,908</b>	<b>345</b>	<b>294</b>	<b>152</b>	<b>184</b>

Notes:

(1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.

(2) ITE Land Use No. 520 - Elementary School

(3) ITE Land Use No. 522 - Middle School/Junior High School



Approximate Scale  
Scale: 1"=3,000'

Figure 1  
**Vicinity  
Map**

APS P-8 at Harmony (LSC #181170)



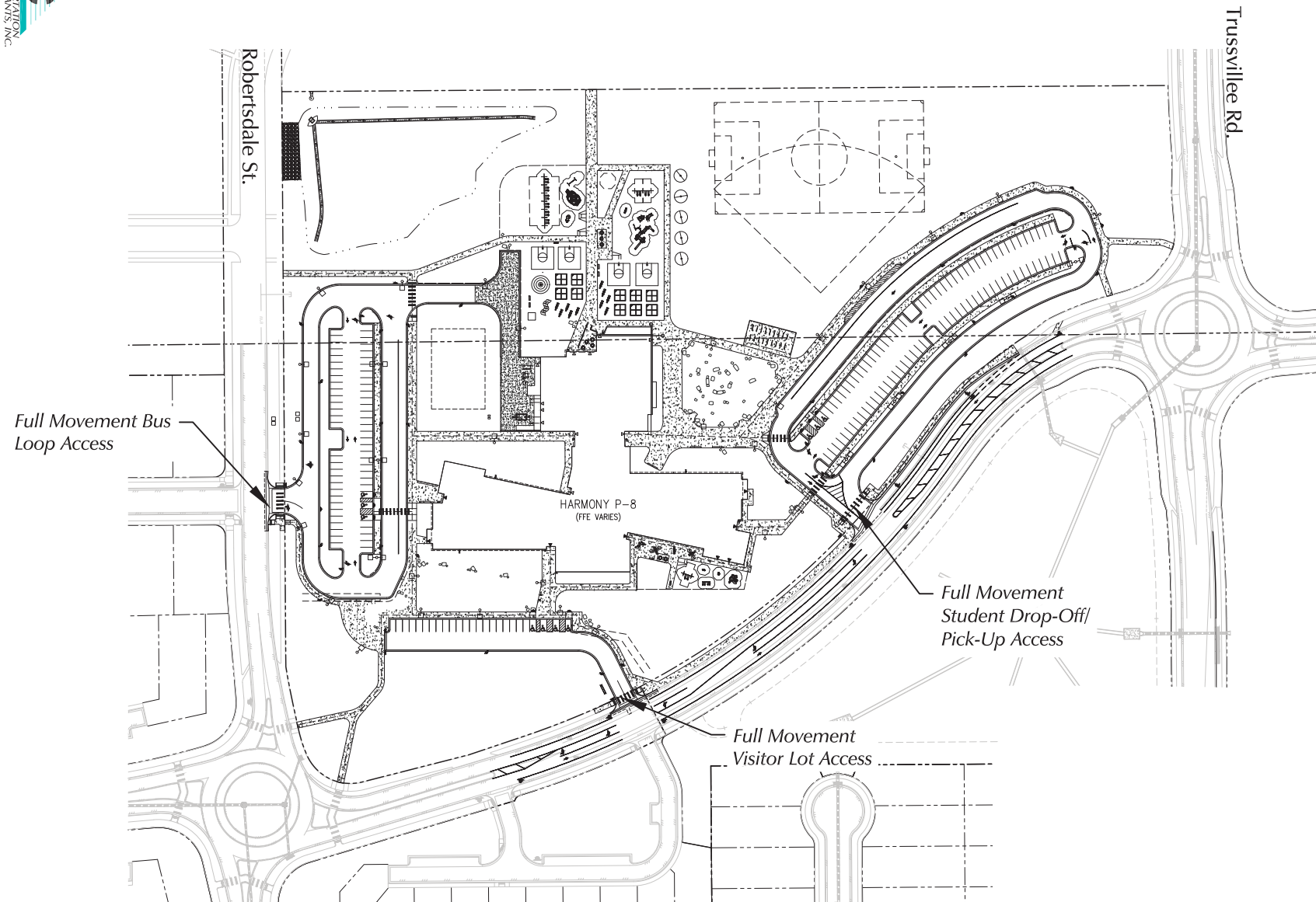


Figure 2  
**Site  
Plan**

APS P-8 at Harmony (LSC #181170)

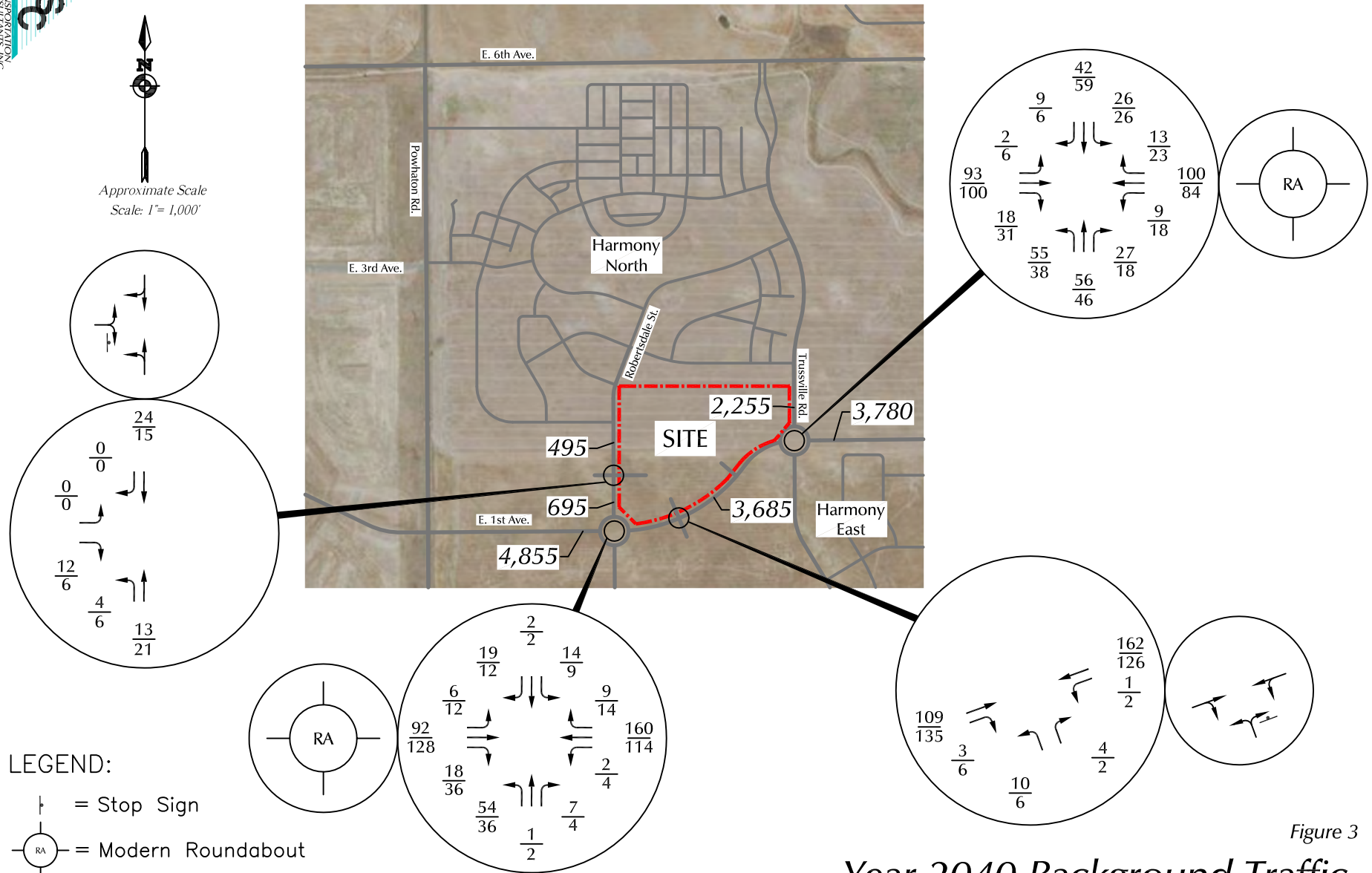
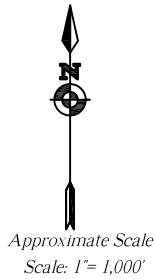
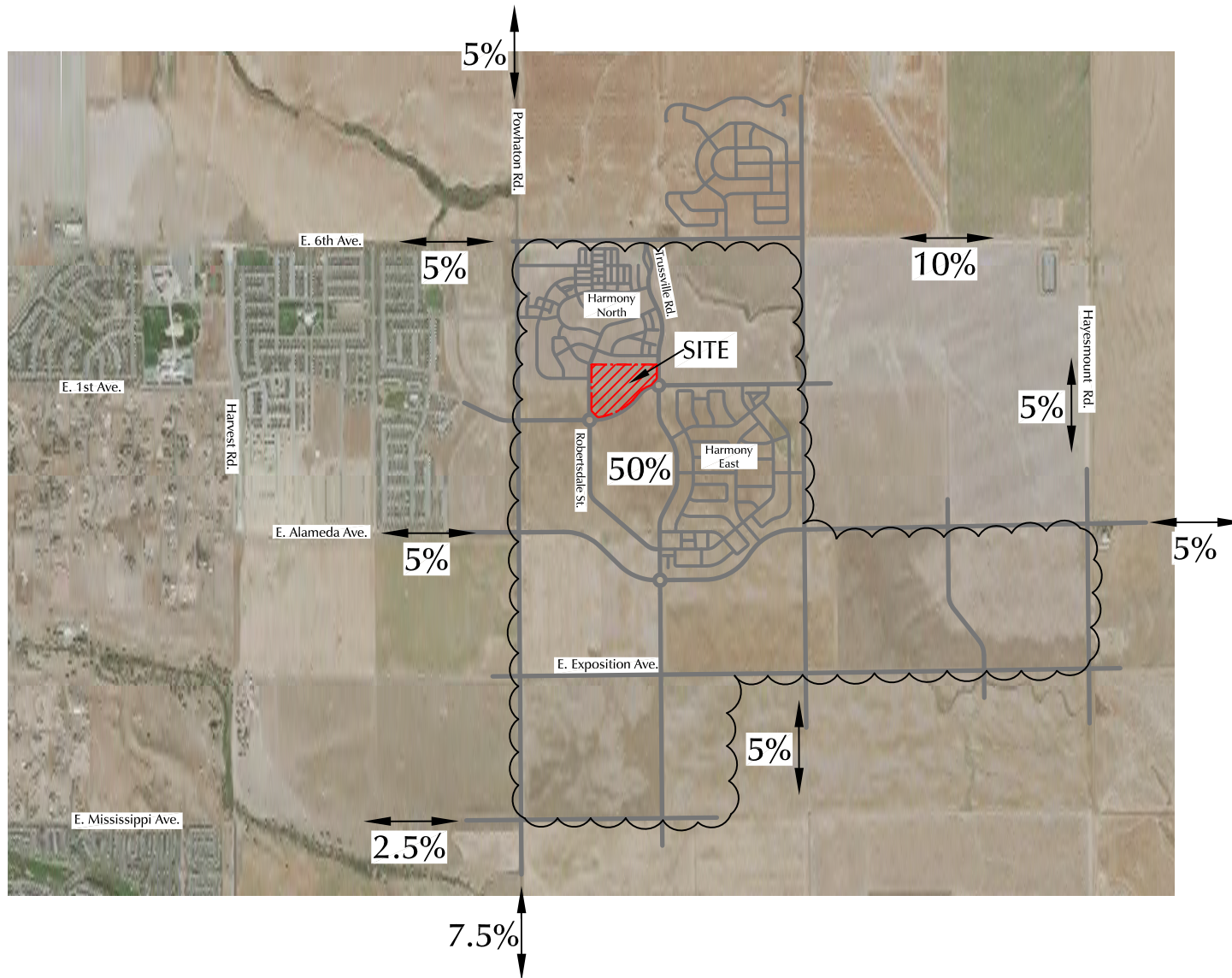


Figure 3  
**Year 2040 Background Traffic,  
Lane Geometry and Traffic Control**  
APS P-8 at Harmony (LSC #181170)



LEGEND:



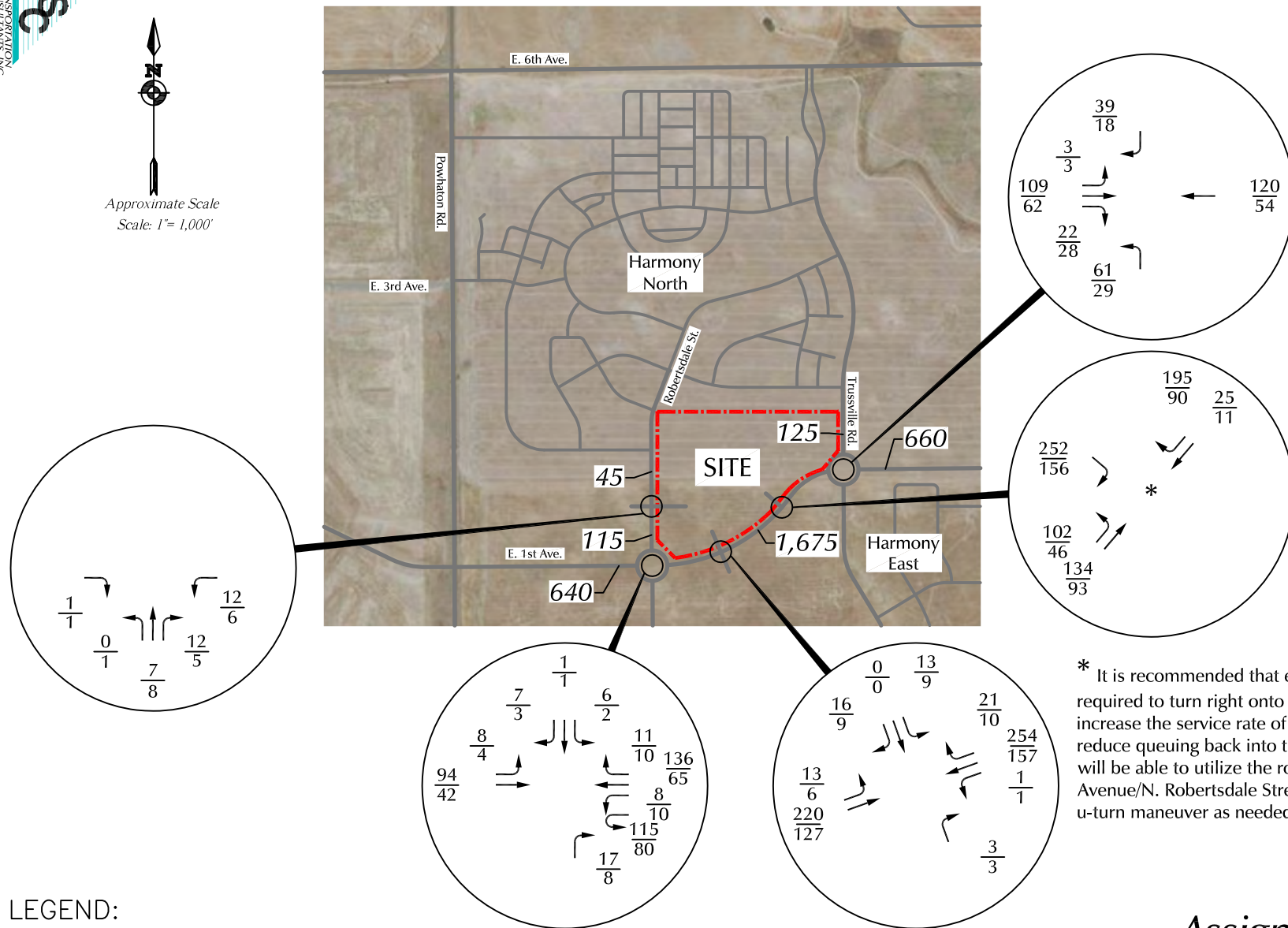
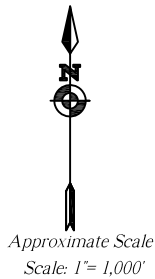
5% = Percent Directional Distribution

Figure 4

## Directional Distribution of Site-Generated Traffic

APS P-8 at Harmony (LSC #181170)





\* It is recommended that exiting vehicles be required to turn right onto E. 1st Avenue to increase the service rate of the access and reduce queuing back into the site. Drivers will be able to utilize the roundabout at E. 1st Avenue/N. Robertsdale Street to complete a u-turn maneuver as needed.

Figure 5

## Assignment of Site-Generated Traffic

APS P-8 at Harmony (LSC #181170)

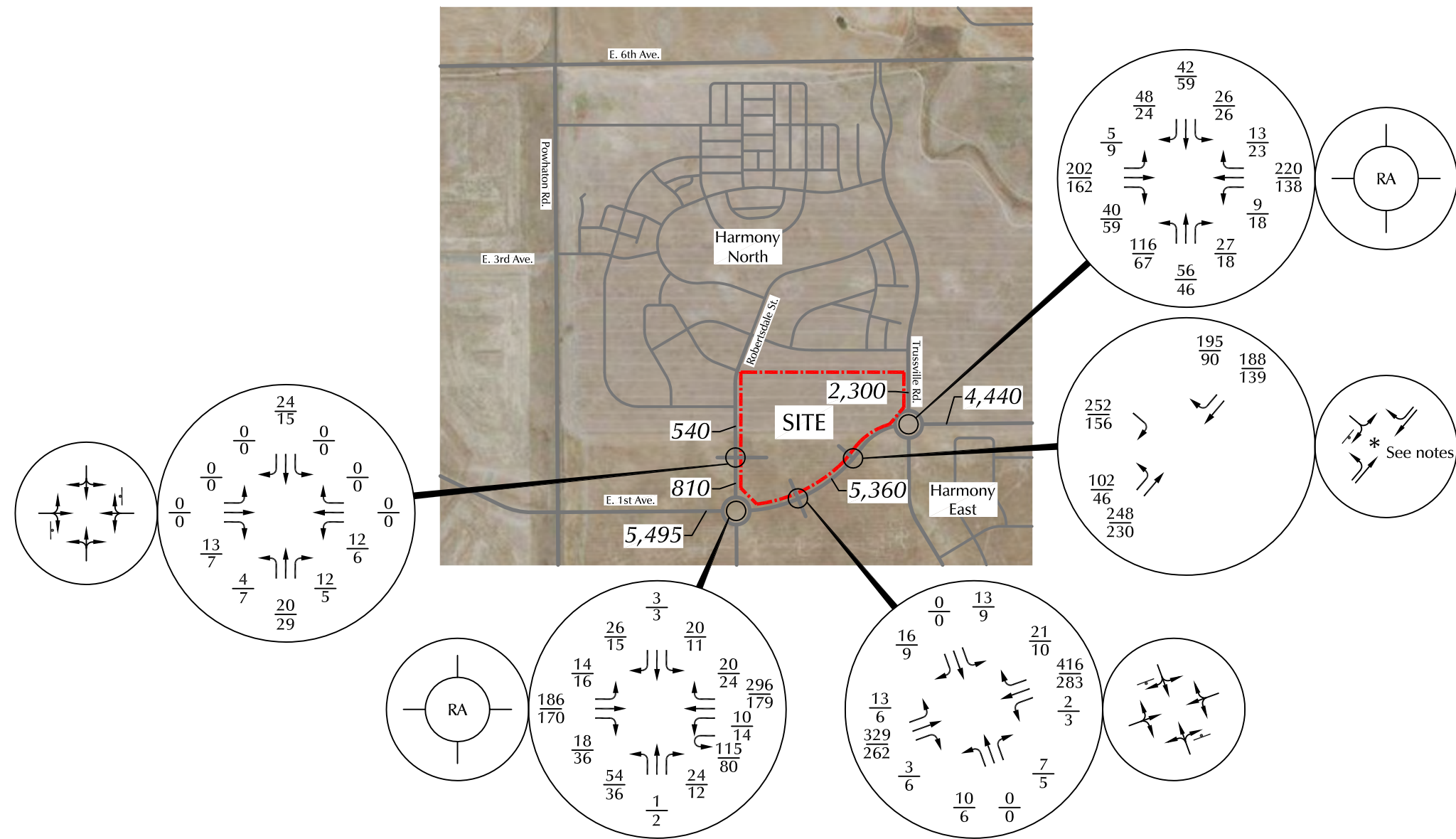
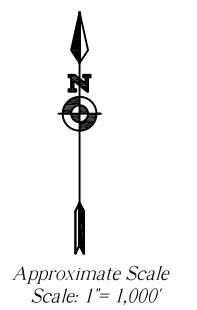


Figure 6  
**Year 2040 Total Traffic,  
 Lane Geometry and Traffic Control**  
 APS P-8 at Harmony (LSC #181170)

## LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2010

### UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>
D	25 to 35 seconds	<u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.




Intersection				
Intersection Delay, s/veh	3.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	127	186	68	38
Demand Flow Rate, veh/h	129	189	69	38
Vehicles Circulating, veh/h	19	68	124	239
Vehicles Exiting, veh/h	258	125	24	18
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.5	4.1	3.5	3.6
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	129	189	69	38
Cap Entry Lane, veh/h	1353	1287	1216	1081
Entry HV Adj Factor	0.984	0.982	0.985	0.999
Flow Entry, veh/h	127	186	68	38
Cap Entry, veh/h	1332	1264	1198	1080
V/C Ratio	0.095	0.147	0.057	0.035
Control Delay, s/veh	3.5	4.1	3.5	3.6
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	0

Intersection				
Intersection Delay, s/veh	3.9			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	123	133	150	84
Demand Flow Rate, veh/h	125	135	153	86
Vehicles Circulating, veh/h	86	125	134	182
Vehicles Exiting, veh/h	182	162	77	78
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.9	4.1	3.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	125	135	153	86
Cap Entry Lane, veh/h	1264	1215	1204	1146
Entry HV Adj Factor	0.984	0.984	0.979	0.978
Flow Entry, veh/h	123	133	150	84
Cap Entry, veh/h	1244	1195	1178	1120
V/C Ratio	0.099	0.111	0.127	0.075
Control Delay, s/veh	3.7	3.9	4.1	3.8
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0



HCM 6th TWSC  
52: N. Robertsdale St & Harmony Access

2040 Background  
AM Peak

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	4	13	24	0
Future Vol, veh/h	0	12	4	13	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	4	14	26	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	48	26	0
Stage 1	26	-	-
Stage 2	22	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	962	1050	1588
Stage 1	997	-	-
Stage 2	1001	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	959	1050	1588
Mov Cap-2 Maneuver	959	-	-
Stage 1	994	-	-
Stage 2	1001	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	1.7	0
HCM LOS	A		




Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	1050	-	-
HCM Lane V/C Ratio	0.003	-	0.012	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
118: Harmony Access & E. 1st Ave

2040 Background  
AM Peak

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	109	3	1	162	10	4
Future Vol, veh/h	109	3	1	162	10	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	3	1	176	11	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	121
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1467
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1467
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	747	-	-	1467	-
HCM Lane V/C Ratio	0.02	-	-	0.001	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection				
Intersection Delay, s/veh	3.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	191	143	45	25
Demand Flow Rate, veh/h	195	145	46	25
Vehicles Circulating, veh/h	16	55	165	170
Vehicles Exiting, veh/h	179	156	46	30
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	3.7	3.5	3.3
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	195	145	46	25
Cap Entry Lane, veh/h	1358	1305	1166	1160
Entry HV Adj Factor	0.981	0.983	0.977	0.998
Flow Entry, veh/h	191	143	45	25
Cap Entry, veh/h	1331	1282	1140	1158
V/C Ratio	0.144	0.111	0.039	0.022
Control Delay, s/veh	3.9	3.7	3.5	3.3
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	0




Intersection				
Intersection Delay, s/veh	3.9			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	150	136	111	99
Demand Flow Rate, veh/h	153	139	113	101
Vehicles Circulating, veh/h	114	100	147	155
Vehicles Exiting, veh/h	142	160	120	83
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	3.9	3.9	3.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	153	139	113	101
Cap Entry Lane, veh/h	1228	1246	1188	1178
Entry HV Adj Factor	0.979	0.980	0.982	0.977
Flow Entry, veh/h	150	136	111	99
Cap Entry, veh/h	1203	1221	1167	1152
V/C Ratio	0.125	0.112	0.095	0.086
Control Delay, s/veh	4.0	3.9	3.9	3.8
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

HCM 6th TWSC  
52: N. Robertsdale St & Harmony Access

2040 Background  
PM Peak

Intersection

Int Delay, s/veh 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	6	21	15	0
Future Vol, veh/h	0	6	6	21	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	7	23	16	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	53	16	16
Stage 1	16	-	-
Stage 2	37	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	955	1063	1602
Stage 1	1007	-	-
Stage 2	985	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	951	1063	1602
Mov Cap-2 Maneuver	951	-	-
Stage 1	1003	-	-
Stage 2	985	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	1.6	0
HCM LOS	A		




Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1063	-	-
HCM Lane V/C Ratio	0.004	-	0.006	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
118: Harmony Access & E. 1st Ave

2040 Background  
PM Peak

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	6	2	126	6	2
Future Vol, veh/h	135	6	2	126	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	7	2	137	7	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	154
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1426
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1426
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1426	-
HCM Lane V/C Ratio	0.012	-	-	0.002	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th Roundabout  
9: N. Robertsdale St & E. 1st Ave

2040 Total  
AM Peak

Intersection				
Intersection Delay, s/veh	7.8			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	287	663	86	65
Demand Flow Rate, veh/h	292	677	88	67
Vehicles Circulating, veh/h	277	80	535	709
Vehicles Exiting, veh/h	499	543	34	48
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	8.8	5.7	6.7
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	292	677	88	67
Cap Entry Lane, veh/h	1040	1272	800	670
Entry HV Adj Factor	0.983	0.980	0.977	0.969
Flow Entry, veh/h	287	663	86	65
Cap Entry, veh/h	1023	1246	781	649
V/C Ratio	0.281	0.532	0.110	0.100
Control Delay, s/veh	6.3	8.8	5.7	6.7
LOS	A	A	A	A
95th %tile Queue, veh	1	3	0	0

HCM 6th Roundabout  
10: Trussville Rd & E. 1st Ave

2040 Total  
AM Peak

Intersection				
Intersection Delay, s/veh 5.9				
Intersection LOS A				
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	329	317	245	138
Demand Flow Rate, veh/h	335	323	250	141
Vehicles Circulating, veh/h	86	227	310	467
Vehicles Exiting, veh/h	522	333	111	83
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.3	6.2	6.1	6.0
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	335	323	250	141
Cap Entry Lane, veh/h	1264	1095	1006	857
Entry HV Adj Factor	0.981	0.982	0.979	0.979
Flow Entry, veh/h	329	317	245	138
Cap Entry, veh/h	1240	1075	985	839
V/C Ratio	0.265	0.295	0.249	0.165
Control Delay, s/veh	5.3	6.2	6.1	6.0
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1



HCM 6th TWSC  
52: N. Robertsdale St & Bus Loop

2040 Total  
AM Peak

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	13	12	0	0	4	20	12	0	24	0
Future Vol, veh/h	0	0	13	12	0	0	4	20	12	0	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	50	92	50	92	92	50	50	50	75	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	13	0	0	4	40	24	0	32	0
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	92	104	32	105	92	52	32	0	0	64	0	0
Stage 1	32	32	-	60	60	-	-	-	-	-	-	-
Stage 2	60	72	-	45	32	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	892	786	1042	875	798	1016	1580	-	-	1538	-	-
Stage 1	984	868	-	951	845	-	-	-	-	-	-	-
Stage 2	951	835	-	969	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	890	784	1042	851	796	1016	1580	-	-	1538	-	-
Mov Cap-2 Maneuver	890	784	-	851	796	-	-	-	-	-	-	-
Stage 1	981	868	-	948	842	-	-	-	-	-	-	-
Stage 2	948	832	-	945	868	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	8.5		9.3		0.5			0				
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1580	-	-	1042	851	1538	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.025	0.015	-	-	-				
HCM Control Delay (s)	7.3	0	-	8.5	9.3	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				







HCM 6th TWSC  
118: E. 1st Ave & Visitor Lot

2040 Total  
AM Peak

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	329	3	2	416	21	10	0	7	13	0	16
Future Vol, veh/h	13	329	3	2	416	21	10	0	7	13	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	75	92	92	75	50	92	92	92	50	92	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	439	3	2	555	42	11	0	8	26	0	32
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	597	0	0	442	0	0	1089	1094	441	1077	1074	576
Stage 1	-	-	-	-	-	-	493	493	-	580	580	-
Stage 2	-	-	-	-	-	-	596	601	-	497	494	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	980	-	-	1118	-	-	193	214	616	197	220	517
Stage 1	-	-	-	-	-	-	558	547	-	500	500	-
Stage 2	-	-	-	-	-	-	490	489	-	555	546	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	980	-	-	1118	-	-	176	206	616	189	212	517
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	206	-	189	212	-
Stage 1	-	-	-	-	-	-	538	528	-	483	499	-
Stage 2	-	-	-	-	-	-	458	488	-	529	527	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0			20.6			20.4		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	249	980	-	-	1118	-	-	291				
HCM Lane V/C Ratio	0.074	0.027	-	-	0.002	-	-	0.199				
HCM Control Delay (s)	20.6	8.8	0	-	8.2	0	-	20.4				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.7				

HCM 6th TWSC  
144: E. 1st Ave & Student Drop Off

2040 Total  
AM Peak

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	102	248	188	195	0	252
Future Vol, veh/h	102	248	188	195	0	252
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	75	75	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	204	331	251	390	0	504
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	641	0	-	0	990	251
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	739	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	943	-	-	-	273	788
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	214	788
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	472	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.8	0		17.3		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	943	-	-	-	788	
HCM Lane V/C Ratio	0.216	-	-	-	0.64	
HCM Control Delay (s)	9.9	-	-	-	17.3	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.8	-	-	-	4.7	

HCM 6th Roundabout  
9: N. Robertsdale St & E. 1st Ave

2040 Total  
PM Peak

Intersection				
Intersection Delay, s/veh	5.8			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	287	446	55	38
Demand Flow Rate, veh/h	293	455	56	38
Vehicles Circulating, veh/h	196	64	431	462
Vehicles Exiting, veh/h	304	423	58	57
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	6.1	4.7	4.6
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	293	455	56	38
Cap Entry Lane, veh/h	1130	1293	889	861
Entry HV Adj Factor	0.981	0.980	0.981	0.998
Flow Entry, veh/h	287	446	55	38
Cap Entry, veh/h	1108	1267	872	860
V/C Ratio	0.259	0.352	0.063	0.044
Control Delay, s/veh	5.7	6.1	4.7	4.6
LOS	A	A	A	A
95th %tile Queue, veh	1	2	0	0





HCM 6th Roundabout  
10: Trussville Rd & E. 1st Ave

2040 Total  
PM Peak

Intersection				
Intersection Delay, s/veh 5.0				
Intersection LOS A				
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	307	229	159	124
Demand Flow Rate, veh/h	313	234	162	127
Vehicles Circulating, veh/h	114	154	261	299
Vehicles Exiting, veh/h	312	269	166	88
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.3	4.9	4.9	4.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	313	234	162	127
Cap Entry Lane, veh/h	1228	1179	1057	1017
Entry HV Adj Factor	0.980	0.980	0.981	0.974
Flow Entry, veh/h	307	229	159	124
Cap Entry, veh/h	1204	1156	1038	991
V/C Ratio	0.255	0.198	0.153	0.125
Control Delay, s/veh	5.3	4.9	4.9	4.8
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

HCM 6th TWSC  
52: N. Robertsdale St & Bus Loop

2040 Total  
PM Peak

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	7	6	0	0	7	29	5	0	15	0
Future Vol, veh/h	0	0	7	6	0	0	7	29	5	0	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	50	92	50	92	92	50	50	50	75	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	14	7	0	0	8	58	10	0	20	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	99	104	20	106	99	63	20	0	0	68	0	0
Stage 1	20	20	-	79	79	-	-	-	-	-	-	-
Stage 2	79	84	-	27	20	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	883	786	1058	873	791	1002	1596	-	-	1533	-	-
Stage 1	999	879	-	930	829	-	-	-	-	-	-	-
Stage 2	930	825	-	990	879	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	879	782	1058	858	787	1002	1596	-	-	1533	-	-
Mov Cap-2 Maneuver	879	782	-	858	787	-	-	-	-	-	-	-
Stage 1	994	879	-	925	825	-	-	-	-	-	-	-
Stage 2	925	821	-	977	879	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.4		9.2		0.7		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1596	-	-	1058	858	1533	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.013	0.008	-	-	-				
HCM Control Delay (s)	7.3	0	-	8.4	9.2	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

HCM 6th TWSC  
118: E. 1st Ave & Visitor Lot

2040 Total  
PM Peak







Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	262	6	3	283	10	6	0	5	9	0	9
Future Vol, veh/h	6	262	6	3	283	10	6	0	5	9	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	75	92	92	75	50	92	92	92	50	92	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	349	7	3	377	20	7	0	5	18	0	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	397	0	0	356	0	0	779	780	353	772	773	387
Stage 1	-	-	-	-	-	-	377	377	-	393	393	-
Stage 2	-	-	-	-	-	-	402	403	-	379	380	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1162	-	-	1203	-	-	313	327	691	317	330	661
Stage 1	-	-	-	-	-	-	644	616	-	632	606	-
Stage 2	-	-	-	-	-	-	625	600	-	643	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1162	-	-	1203	-	-	301	322	691	311	325	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	322	-	311	325	-
Stage 1	-	-	-	-	-	-	636	608	-	624	604	-
Stage 2	-	-	-	-	-	-	606	598	-	630	606	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.1			14.2			14.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	405	1162	-	-	1203	-	-	423				
HCM Lane V/C Ratio	0.03	0.01	-	-	0.003	-	-	0.085				
HCM Control Delay (s)	14.2	8.1	0	-	8	0	-	14.3				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3				

HCM 6th TWSC  
144: E. 1st Ave & Student Drop Off

2040 Total  
PM Peak

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	230	139	90	0	156
Future Vol, veh/h	46	230	139	90	0	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	150	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	75	75	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	307	185	180	0	312

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	365	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1194	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1194	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1194	-	-	-	857
HCM Lane V/C Ratio	0.077	-	-	-	0.364
HCM Control Delay (s)	8.3	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7